



05-6-05

1K C8C.  
\$

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of: Neelkanth S. Gupte

Docket No.: 210\_187DIV

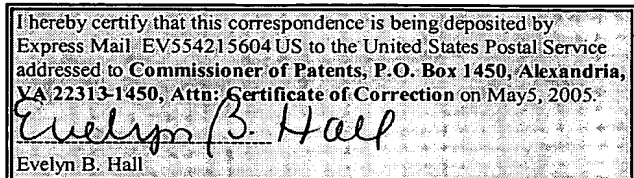
Ser. No.: 10/603,022

Patent No.: 6,877,338 B2

Filed: June 24, 2003

Issued: April 12, 2005

For: HEAT EXCHANGER FOR HIGH STAGE GENERATOR OF ABSORPTION CHILLER

REQUEST FOR CERTIFICATE OF CORRECTION  
PATENT OFFICECommissioner of Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450  
Attn: Certificate of Correction

Sir:

Receipt of the above-identified patent is hereby acknowledged.

In checking the original patent against our file, however, two (2) errors were noted. On Claim No. 3 the word heat was misspelled and Claim No. 19 the word the was not omitted. We have attached the Amendment dated September 2, 2004 for your review.

Errors to this Patent were made by both our office and the PTO. It is, therefore, requested that a Certificate of Correction be issued as per the attached form PTO 1050 submitted herewith in duplicate.

The Director is hereby authorized to charge any additional fees associated with this communication or credit any overpayment to Deposit Account No. 50-0289. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

WALL MARJAMA &amp; BILINSKI LLP

By:

  
Owen D. Marjama  
Reg. No. 22,818

05/09/2005 CNGUYEN1 00000087 6877338

01 FC:1811

100.00 OP

ODM:ebh

Tele: (315) 425-9000

Fax: (315) 425-9114

Customer No.: \*20874

**UNITED STATES PATENT AND TRADEMARK OFFICE  
CERTIFICATE OF CORRECTION**

PATENT NO : 6,877,338 B2  
DATED : April 12, 2005  
INVENTOR(S) : Neelkanth S. Gupte

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

**CLAIMS**

Column 6, Line 37, Claim 3. after the word temperature the word "hat" is incorrect please replace with the word -- heat --.

Column 8, Line 43, Claim 19. after the word entering the word "the" should have been omitted.

MAILING ADDRESS OF SENDER:  
Wall Marjama & Bilinski LLP  
101 South Salina Street, 4<sup>th</sup> Floor  
Syracuse, NY 13202  
315-425-9000

PATENT NO. 6,877,338 B2

No. of additional copies 1 of 1





Practitioner's Docket No.: 210\_187DIV

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

**COPY**

In re the application of: Neelkanth S. Gupte

September 2, 2004

Serial No.: 10/603,022

Art Unit: 3744

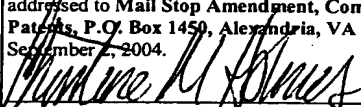
Filed: June 24, 2003

Examiner: Jiang, Chen Wen

Confirmation No.: 2590

For: HEAT EXCHANGER FOR HIGH STAGE GENERATOR OF ABSORPTION CHILLER

Mail Stop Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail addressed to Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on September 2, 2004.  
  
Christine M. Holmes

**AMENDMENT AND RESPONSE**

Sir:

In response to the Office Action mailed from the United States Patent and Trademark Office on July 19, 2004, please amend the above-identified application as follows:

**Amendments to the Claims** are reflected in the listing of claims which begins on page 2 of this paper.

**Amendments to the Drawings** begin on page 10 of this paper and include attached replacement sheets.

**Remarks/Arguments** begin on page 11 of this paper.

**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in the above-captioned patent application:

**Listing of Claims:**

1-36 (Cancelled)

(1)

37. (Previously Presented) In an absorption cooling system of the type which uses a refrigerant and an absorbent solution and which includes a high stage generator, absorber, condenser, heat exchangers, and an evaporator and means for connecting said components to one another to form a closed absorption cooling system with said solution side of said high stage generator being fluidically divided with a partition plate into two sections of substantially identical construction whereby gas exiting one section at relatively high temperature is further cooled in the second section which functions as a flue gas recuperator (FGR) to improve overall burner efficiency, and where the entire solution leaving the absorber is passed through the FGR.

(2)

38. (Previously Presented) In an absorption cooling system of the type which uses a refrigerant and an absorbent solution and which includes a high stage generator, absorber, condenser, heat exchangers, and an evaporator and means for connecting said components to one another to form a closed absorption cooling system with said solution side of said high stage generator being fluidically divided with a partition plate into two sections of substantially identical construction whereby gas exiting one section at relatively high temperature is further cooled in the second section which functions as a flue gas recuperator (FGR) to improve

overall burner efficiency, in which a fraction of the solution leaving the absorber is passed through the FGR.

(3)

39. (Currently Amended) In an absorption cooling system of the type which uses a refrigerant and an absorbent solution and which includes a high stage generator, absorber, condenser, a high temperature heat exchangers, a low temperature ~~hat~~ exchanger, and an evaporator and means for connecting said components to one another to form a closed absorption cooling system with said solution side of said high stage generator being fluidically divided with a partition plate into two sections of substantially identical construction whereby gas exiting one section at relatively high temperature is further cooled in the second section which functions as a flue gas recuperator (FGR) to improve overall burner efficiency, in which the stream of weak solution leaving ~~H2~~ said low temperature heat exchanger is split with a fraction of said solution being heated in the FGR.

Typo  
over  
faster

(4)

40. (Currently Amended) In an absorption cooling system of the type which uses a refrigerant and an absorbent solution and which includes a high stage generator, a low stage generator, absorber, condenser, heat exchangers, and an evaporator and means for connecting said components to one another to form a closed absorption cooling system with said solution side of said high stage generator being fluidically divided with a partition plate into two sections of substantially identical construction whereby gas exiting one section at relatively high temperature is further cooled in the second section which functions as a flue gas recuperator

(FGR) to improve overall burner efficiency, in which part of the solution entering  
~~G2~~ said low stage generator is bypassed to the FGR.

(5) 41. (Previously Presented) In an absorption cooling system of the type which uses a refrigerant and an absorbent solution and which includes a high stage generator, absorber, condenser, heat exchangers, and an evaporator and means for connecting said components to one another to form a closed absorption cooling system with said solution side of said high stage generator being fluidically divided with a partition plate into two sections of substantially identical construction whereby gas exiting one section at relatively high temperature is further cooled in the second section which functions as a flue gas recuperator (FGR) to improve overall burner efficiency and where all of the weak solution that is circulated in the absorption cycle is passed through the FGR before entering in low temperature heat exchanger to exchange heat with exhaust gas leaving high stage generator section to eliminate the danger of crystallization of strong solution in the low temperature heat exchanger.

(6) 42. (Currently Amended) In an absorption cooling system of the type which uses a refrigerant and an absorbent solution and which includes a high stage generator, absorber, condenser, high temperature heat exchangers, a low temperature heat exchanger and an evaporator and means for connecting said components to one another to form a closed absorption cooling system with said solution side of said high stage generator being fluidically divided with a partition plate into two sections

of substantially identical construction whereby gas exiting one section at relatively high temperature is further cooled in the second section which functions as a flue gas recuperator (FGR) to improve overall burner efficiency, and where a fraction of weak solution that is circulated in the absorption cycle is passed through the FGR to exchange heat with exhaust gas leaving the high stage generator section.

(7)

43. (Currently Amended) The system of claim 42 in which solution leaving the FGR is mixed with heated weak solution leaving the said high temperature heat exchanger.

(8)

44. (Previously Presented) The system of claim 43 in which the fraction of solution passing through the FGR is such that temperature of solution leaving FGR is  $\pm 10$  degree C when compared to temperature of heated weak solution leaving the high temperature exchanger.

(12)

45. (Currently Amended) The system of claim 42 in which solution leaving the FGR is mixed with heated weak solution leaving the said low temperature heat exchanger.

(13)

46. (Previously Presented) The system of claim 45 in which the fraction of solution passing through the FGR is such that the temperature of solution leaving the FGR is  $\pm 5$  degree C when compared to temperature of heated weak solution leaving low temperature heat exchanger.

(9)

47. (Previously Presented) The system in claim 44 in which the fraction of solution flow entering the FGR is determined by use of an orifice.

(10)

48. (Previously Presented) The system in claim 44 in which the fraction of solution flow entering the FGR is determined by use of a mechanical valve.

(41)

49. (Previously Presented) The system in claim 44 in which the fraction of solution flow entering the FGR is determined by use of an electronically controlled valve.

(14)

50. (Currently Amended) The system in claim 46 in which the fraction of solution flow entering the FGR is determined by use of ~~a mechanical valve~~ an orifice.

(15)

51. (Previously Presented) The system in claim 46 in which the fraction of solution flow entering the FGR is determined by use of a mechanical valve.

(16)

52. (Previously Presented) The system in claim 46 in which the fraction of solution flow entering the FGR is determined by use of an electronically controlled valve.

(17)

53. (Previously Presented) In an absorption cooling system of the type which uses a refrigerant and an absorbent solution and which includes a high stage



generator, absorber, condenser, high and low temperature heat exchangers, and an evaporator and means for connecting said components to one another to form a closed absorption cooling system with said solution side of said high stage generator being fluidically divided with a partition plate into two sections of substantially identical construction whereby gas exiting one section at relatively high temperature is further cooled in the second section which functions as a flue gas recuperator (FGR) to improve overall burner efficiency, and where a fraction of the stream of the weak solution leaving the low temperature heat exchanger is passed through the FGR to exchange heat with exhaust gas leaving the high stage generator section.

18 54. (Previously Presented) In an absorption cooling system of the type which uses a refrigerant and an absorbent solution and which includes a high stage generator, absorber, condenser, high and low temperature heat exchangers, and an evaporator and means for connecting said components to one another to form a closed absorption cooling system with said solution side of said high stage generator being fluidically divided with a partition plate into two sections of substantially identical construction whereby gas exiting one section at relatively high temperature is further cooled in the second section which functions as a flue gas recuperator (FGR) to improve overall burner efficiency, and where the fraction of solution passing through the FGR is such that the temperature of the solution leaving the FGR is +/-5 degree C when compared to the temperature of the heated weak solution leaving the high temperature heat exchanger.

19 55. (Currently Amended) In an absorption cooling system of the type which uses a refrigerant and an absorbent solution and which includes a high stage generator, a low stage generator, absorber, condenser, high and low temperature heat exchangers, and an evaporator and means for connecting said components to one another to form a closed absorption cooling system with said solution side of said high stage generator being fluidically divided with a partition plate into two sections of substantially identical construction whereby gas exiting one section at relatively high temperature is further cooled in the second section which functions as a flue gas recuperator (FGR) to improve overall burner efficiency and where a fraction of the solution entering the said low stage generator is bypassed to exchange heat in the FGR to produce refrigerant vapor.

They didn't take the word out [the]  
20 56. (Previously Presented) The system in claim 55 in which the fraction of the solution entering FGR is such that concentration of solution leaving FGR is equal to concentration of solution leaving low stage generator.

21 57. (Previously Presented) The system in claim 55 in which the fraction of solution entering the FGR is such that the absorbent concentration of solution leaving the FGR is within  $\pm 0.5$  percent absolute when compared to the absorbent concentration of solution leaving the low stage generator.

Serial No.: 10/603,022

Amendment Dated: September 2, 2004

Reply to Office Action of July 19, 2004

23

58. (Previously Presented) The system of claim 55 in which the vapor portion of the FGR and vapor portion of the low stage generator are fluidically connected to operate at a pressure difference not exceeding 0.2 torr.

Serial No.: 10/603,022  
Amendment Dated: September 2, 2004  
Reply to Office Action of July 19, 2004

**AMENDMENTS TO THE DRAWINGS:**

New drawings have been submitted. The new drawings correct the objection made to Figures 1-4 which now include the legend "prior art" as required by the Examiner. The submission of new drawings is thought to correct the objection raised by the Examiner and also correct informalities regarding reference character and line quality.

Attachment: Replacement Sheets

**REMARKS/ARGUMENTS**

Reconsideration of the above application is hereby requested in view of the above amendments and following remarks.

The allowance of claims 37, 38, 41, 42, 53 and 54 is noted with appreciation.

Claims 39 and 40 have been rejected under 35 U.S.C. 112 with respect to the terms "H2" and "G2". The claims have been amended to recite the proper words "heat exchanger" for H and "generator" for G. It is therefore felt that adequate support has been set forth for these terms in the claims. Support for the word description for H and G are set forth in the specification paragraphs [0029] and [0035].

Claims 43-52 and 55-58 are rejected under 35 U.S.C. 112 as being indefinite. Specifically, claim 43 is objected to in that the limitation "the high temperature heat exchanger" lacks insufficient antecedent basis. Claim 42, upon which claim 43 depends, has been amended to provide for both "high and low temperature heat exchangers" and therefore the objection to claim 43 as lacking antecedent basis, and claim 45 as lacking antecedent for the terms "high temperature heat exchanger" and "low temperature heat exchanger" are now felt to have adequate antecedent basis in that the claim upon which they depend, i.e. claim 43, now specifically has the language to support the limitations recited in the respective dependent claims. It is therefore felt that this objection has now been overcome.

Claim 55 has been rejected on insufficient antecedent basis for the term "low stage generator". The term "low stage generator" has now been added to line 2 of the claim, and therefore the limitation containing in the last line of claim is felt to be supported by the claim as amended.

The Examiner suggests that claim 50 be amended to change "a mechanical valve" to "an orifice". Claim 50 has been amended as requested by the Examiner, and is therefore felt that this objection has now been overcome.

In view of the above amendments to the claims being objected to under 35 U.S.C. 112, and the submission of new drawings, it is submitted that all of the rejections and objections made in the Office Action have been addressed and

Serial No.: 10/603,022  
Amendment Dated: September 2, 2004  
Reply to Office Action of July 19, 2004

overcome. It is therefore believed that the application is now in condition for allowance.

In view of the above it is respectfully requested that the above rejections and objections be reconsidered and withdrawn and instant application passed to issue at an early date.

If the Examiner wishes to expedite disposition of the above-captioned patent application, he is invited to contact Applicant's representative at the telephone number below.

The Commissioner is hereby authorized to charge any additional fees associated with this communication or credit any overpayment to Deposit Account No. 50-0289.

Respectfully submitted,

WALL MARJAMA & BILINSKI LLP

By: 

Owen D. Marjama  
Reg. No. 22,818

ODM/cmh  
Telephone: (315) 425-9000

Customer No.: 20874